AD)			

Award Number: DAMD17-99-1-9248

TITLE: Physiological Stress Reactivity and Breast Cancer

PRINCIPAL INVESTIGATOR: Pathik Wadhwa, M.D., Ph.D.

CONTRACTING ORGANIZATION: University of California at Irvine

Irvine, California 92697

REPORT DATE: October 2001

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command

Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;

Distribution Unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

REPORT DOCUMENTATION PAGE

Form Approved OMB No. 074-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

1. AGENCY USE ONLY (Leave blank) 2. REPORT DATE	3. REPORT TYPE AND			
	October 2001	Annual (1 Oct	00 - 30 Se	p 01)	
4. TITLE AND SUBTITLE				5. FUNDING NUMBERS	
Physiological Stress Reactivity ar	DAMD17-99	-1-9248			
6. AUTHOR(S)					
Pathik Wadhwa, M.D., Pl	n . D .				
7. PERFORMING ORGANIZATION N			8. PERFORMING ORGANIZATION		
University of Californ			REPORT NUMBER		
Irvine, California 92	597				
T "					
E-Mail: pwadhwa@uci.edu					
9. SPONSORING / MONITORING A	GENCY NAME(S) AND ADDRESS(ES	3)	10. SPONSOR	ING / MONITORING	
J. S.		•		REPORT NUMBER	
U.S. Army Medical Research and	Materiel Command				
Fort Detrick, Maryland 21702-50	012				
				4	
11. SUPPLEMENTARY NOTES					
12a. DISTRIBUTION / AVAILABILIT	/ STATEMENT			12b. DISTRIBUTION CODE	
12a. DISTRIBUTION / AVAILABILITY Approved for Public Re		imited		12b. DISTRIBUTION CODE	
		imited		12b. DISTRIBUTION CODE	
		imited		12b. DISTRIBUTION CODE	
		imited		12b. DISTRIBUTION CODE	
Approved for Public Re. 13. ABSTRACT (Maximum 200 Wo.	Lease; Distribution Unl				
Approved for Public Re. 13. ABSTRACT (Maximum 200 Wo. The objective of the p	Lease; Distribution Unl	arch is to study		rical processes that	
Approved for Public Re. 13. ABSTRACT (Maximum 200 Wo. The objective of the p may mediate the links	Lease; Distribution Unl rds) resent program of resea between psychological s	arch is to study	r. Specif	cical processes that cically, the present	
Approved for Public Re. 13. ABSTRACT (Maximum 200 Wo. The objective of the p may mediate the links study is designed to c	Lease; Distribution Unl rds) resent program of resea between psychological so conduct an investigation	arch is to study states and cance n of the cross-s	r. Specif	cical processes that ically, the present associations between	
Approved for Public Re. 13. ABSTRACT (Maximum 200 Wo. The objective of the p may mediate the links study is designed to c indices of stress reac	Iease; Distribution Unl Ids) resent program of resea between psychological so conduct an investigation tivity and psychological	arch is to study states and cance n of the cross-s al coping styles	r. Specif ectional a in women	cical processes that sically, the present sociations between with breast cancer	
Approved for Public Re. 13. ABSTRACT (Maximum 200 Wo. The objective of the p may mediate the links study is designed to c indices of stress reac and matched healthy co	Iease; Distribution Unlards) resent program of resease tween psychological sonduct an investigation tivity and psychological antrols. The aims of the second controls of the second control controls of the second control controls of the second controls of the second control controls of the second control controls of the second control control control controls of the second control cont	arch is to study states and cance of the cross-sal coping styles ne project are:	r. Specificational a in women (1) To qui	cical processes that ically, the present ssociations between with breast cancer cantify parameters of	
13. ABSTRACT (Maximum 200 Wo. The objective of the p may mediate the links study is designed to c indices of stress reac and matched healthy co biological reactivity	rds) resent program of resease tween psychological sonduct an investigation tivity and psychological strols. The aims of the control of the c	arch is to study states and cance of the cross-sal coping styles he project are:	r. Specif ectional a in women (1) To quen with an	rical processes that fically, the present associations between with breast cancer fantify parameters of ad without breast	
13. ABSTRACT (Maximum 200 Wo. The objective of the p may mediate the links study is designed to c indices of stress reac and matched healthy co biological reactivity cancer; (2) To examine	rds) resent program of resease tween psychological sonduct an investigation tivity and psychological strols. The aims of the to a behavioral stress effects of menopause a	arch is to study states and cance of the cross-sal coping styles he project are: paradigm in womand familial ris	r. Specificational are in women (1) To quen with an k on biological entertails.	rical processes that fically, the present associations between with breast cancer fantify parameters of ad without breast ogical stress	
13. ABSTRACT (Maximum 200 Wo. The objective of the p may mediate the links study is designed to c indices of stress reac and matched healthy co biological reactivity cancer; (2) To examine reactivity and emotion	rds) resent program of research program of research program of research product an investigation tivity and psychological strois. The aims of the to a behavioral stress effects of menopause and expression; and (3)	arch is to study states and cance of the cross-sal coping styles ne project are: paradigm in womand familial ris	r. Specificational archive in women (1) To quien with and k on biologmethodolog	rical processes that rically, the present resociations between with breast cancer rantify parameters of red without breast regical stress ry and obtain	
13. ABSTRACT (Maximum 200 Wo The objective of the p may mediate the links study is designed to c indices of stress reac and matched healthy co biological reactivity cancer; (2) To examine reactivity and emotion preliminary data which	resert program of reserved and investigation trivity and psychological strivity and psychological and the stress of the stress of menopause and expression; and (3) could justify subseque	arch is to study states and cance of the cross-sal coping styles he project are: paradigm in womand familial rise To develop the ent, prospective	r. Specificational a in women (1) To que with an k on biology research	gical processes that fically, the present associations between with breast cancer antify parameters of a without breast agical stress by and obtain with high-risk	
13. ABSTRACT (Maximum 200 Wo The objective of the p may mediate the links study is designed to c indices of stress reac and matched healthy co biological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This rep	resent program of research program of research program of research product an investigation tivity and psychological strong and the stress of menopause and expression; and (3) could justify subsequent outlines the steps	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise To develop the ent, prospective that have been	r. Specificational are in women (1) To quien with an k on biology research taken to research.	rical processes that rically, the present associations between with breast cancer antify parameters of ad without breast rical stress ry and obtain with high-risk resume this research	
13. ABSTRACT (Maximum 200 Wo The objective of the p may mediate the links study is designed to c indices of stress reac and matched healthy co biological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This rep study at University of	resent program of research program of research program of research product an investigation tivity and psychological strong and the stress of menopause and expression; and (3) could justify subsequenct outlines the steps California-Irvine even	arch is to study states and cance of the cross-sal coping styles he project are: paradigm in womand familial rise. To develop the ent, prospective that have been or since the auth	r. Specificational are in women (1) To quien with an k on biology research taken to ror left the	rical processes that rically, the present associations between with breast cancer antify parameters of ad without breast regical stress ry and obtain with high-risk resume this research are previous site,	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress react and matched healthy combiological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This repetitudy at University of University of Kentucky	resent program of research program of research program of research product an investigation tivity and psychological stroits. The aims of the to a behavioral stress effects of menopause and expression; and (3) could justify subsequent outlines the steps California-Irvine event.	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise. To develop the ent, prospective that have been a since the authors setting up a be	r. Specificational are in women (1) To quien with an k on biology research taken to ror left the havioral methodology research researc	rical processes that rically, the present associations between with breast cancer antify parameters of ad without breast agical stress and obtain with high-risk resume this research are previous site, are dicine research	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress react and matched healthy combiological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This reput study at University of University of Kentucky laboratory, obtaining	resent program of research program of research program of research product an investigation tivity and psychological stroits. The aims of the to a behavioral stress effects of menopause and expression; and (3) could justify subsequent outlines the steps California-Irvine event. These steps include IRB approval for the program of the steps approval for the program of the steps approval for the program of the	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise. To develop the ent, prospective that have been a since the authorized setting up a becoject from UCI,	r. Specificational a in women (1) To quien with an k on biologer research taken to ror left the havioral mobtaining	cical processes that cically, the present essociations between with breast cancer earlies parameters of ed without breast egical stress ey and obtain with high-risk resume this research es previous site, edicine research eapproval from the	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress react and matched healthy combiological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This repulations. This repulations of Kentucky laboratory, obtaining University's General C	resent program of research program of research program of research product an investigation tivity and psychological stroits. The aims of the to a behavioral stress effects of menopause and expression; and (3) could justify subsequent outlines the steps California-Irvine event. These steps include IRB approval for the palinical Research Center	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise To develop the ent, prospective that have been a since the authorisetting up a becoject from UCI, at to conduct the	r. Specificational a in women (1) To que the with an k on biology research taken to research taken to refet the havioral mobtaining study, see	cical processes that cically, the present essociations between with breast cancer earlies parameters of ed without breast egical stress ey and obtain with high-risk esume this research es previous site, edicine research eapproval from the etting up a	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress react and matched healthy combiological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This reput study at University of University of Kentucky laboratory, obtaining	resent program of research program of research program of research product an investigation tivity and psychological stroits. The aims of the to a behavioral stress effects of menopause and expression; and (3) could justify subsequent outlines the steps California-Irvine event. These steps include IRB approval for the palinical Research Center	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise To develop the ent, prospective that have been a since the authorisetting up a becoject from UCI, at to conduct the	r. Specificational a in women (1) To que the with an k on biology research taken to research taken to refet the havioral mobtaining study, see	cical processes that cically, the present essociations between with breast cancer earlies parameters of ed without breast egical stress ey and obtain with high-risk esume this research es previous site, edicine research eapproval from the etting up a	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress react and matched healthy combiological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This reput study at University of University of Kentucky laboratory, obtaining University's General Collaboration with an	resent program of research program of research program of research product an investigation tivity and psychological stroits. The aims of the to a behavioral stress effects of menopause and expression; and (3) could justify subsequent outlines the steps California-Irvine event. These steps include IRB approval for the palinical Research Center	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise To develop the ent, prospective that have been a since the authorisetting up a becoject from UCI, at to conduct the	r. Specificational a in women (1) To que the with an k on biology research taken to research taken to refet the havioral mobtaining study, see	cical processes that cically, the present essociations between with breast cancer earlies parameters of ed without breast egical stress ey and obtain with high-risk esume this research es previous site, edicine research eapproval from the etting up a	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress reach and matched healthy combiological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This repulations. This repulations of Kentucky laboratory, obtaining University's General C	resent program of research program of research program of research product an investigation tivity and psychological stroits. The aims of the total behavioral stress effects of menopause and expression; and (3) could justify subsequence outlines the steps California-Irvine event. These steps include IRB approval for the polinical Research Centerponcologist and biochemical	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise To develop the ent, prospective that have been a since the authorisetting up a becoject from UCI, at to conduct the	r. Specificational a in women (1) To que the with an k on biology research taken to research taken to refet the havioral mobtaining study, see	cical processes that sically, the present associations between with breast cancer antify parameters of adwithout breast sical stress by and obtain with high-risk resume this research as previous site, addicine research approval from the etting up a sessary staff.	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress reace and matched healthy combiological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This reput study at University of University of Kentucky laboratory, obtaining University's General Collaboration with an	resent program of research program of research program of research product an investigation tivity and psychological stroits. The aims of the total behavioral stress effects of menopause and expression; and (3) could justify subsequence outlines the steps California-Irvine event. These steps include IRB approval for the polinical Research Centerponcologist and biochemical	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise To develop the ent, prospective that have been a since the authorisetting up a becoject from UCI, at to conduct the	r. Specificational a in women (1) To que the with an k on biology research taken to research taken to refet the havioral mobtaining study, see	cical processes that cically, the present associations between with breast cancer antify parameters of adwithout breast or and obtain with high-risk resume this research approval from the atting up a sessary staff.	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress reace and matched healthy combiological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This reput study at University of University of Kentucky laboratory, obtaining University's General Collaboration with an	resent program of research program of research program of research product an investigation tivity and psychological stroits. The aims of the total behavioral stress effects of menopause and expression; and (3) could justify subsequence outlines the steps California-Irvine event. These steps include IRB approval for the polinical Research Centerponcologist and biochemical	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise To develop the ent, prospective that have been a since the authorisetting up a becoject from UCI, at to conduct the	r. Specificational are in women (1) To queen with an k on biology research taken to research taken to research taken to restaining study, see other needs	cical processes that sically, the present associations between with breast cancer antify parameters of adwithout breast sical stress by and obtain with high-risk resume this research as previous site, addicine research approval from the etting up a sessary staff.	
13. ABSTRACT (Maximum 200 Wood The objective of the period may mediate the links study is designed to condices of stress reach and matched healthy condicted biological reactivity cancer; (2) To examine reactivity and emotion preliminary data which populations. This repulations. This repulations of Kentucky laboratory, obtaining University of Kentucky laboratory, obtaining University's General Collaboration with an 14. SUBJECT TERMS breast cancer risk, stress	resent program of research program of research program of research product an investigation tivity and psychological strong and the stress of menopause and expression; and (3) could justify subsequent outlines the steps California-Irvine event. These steps include IRB approval for the principal Research Center oncologist and biochemicals, coping, behavior	arch is to study states and cancer of the cross-sal coping styles he project are: paradigm in womand familial rise. To develop the ent, prospective that have been a since the authorise setting up a become of the conduct the fist, and recruit	r. Specificational are in women (1) To que the with an k on biology research taken to research taken to research taken to restancy, see other necessary.	rical processes that rically, the present associations between with breast cancer antify parameters of a without breast rical stress ry and obtain with high-risk resume this research reprevious site, redicine research reprevious from the retting up a ressary staff.	

Table of Contents

Cover	1
SF 298	
Table of Contents	3
Introduction	4
Body	4
Key Research Accomplishments	5
Reportable Outcomes	5
Conclusions	5
References	5
Appendices	5

NOTE:

The project's Principal Investigator, Pathik D. Wadhwa, M.D., Ph.D., has taken the many steps necessary, as elaborated below, in transferring the grant from the University of Kentucky College of Medicine (applicant organization) to the current institution where he is employed, University of California, Irvine. The PI is currently waiting for the Department of Defense to process the request for the grant transfer before data collection begins. During the period that the present report covers, no new data collection has been performed. The PI was not aware that a progress report is needed since there has not been data collection, and apologizes for the delay in submitting this progress report.

INTRODUCTION:

The broad objective of the present program of research is to study physiological process that may mediate the links between psychological states and cancer. Specifically, the present study is designed to conduct and investigation of the cross-sectional associations between indices of stress reactivity and psychological coping styles in women with breast cancer and matched healthy controls. The aims of the project are: (1) To quantify parameters of biological reactivity to a behavioral stress paradigm in women with and without breast cancer; (2) To examine (a) group differences between women with and without breast cancer in biological stress reactivity, and (b) the effects of menopause and familial risk on biological stress reactivity and emotional expression; and (3) To develop the methodology and obtain preliminary data which could justify subsequent, prospective research with high-risk populations.

BODY:

The research plan is unchanged from the original application. However, the statement of work has been revised as follows:

- A. Recruitment and assessment: Subjects will be recruited and assessed at the rate of approximately 5-6/month (2-3 from BC group; 2-3 from HC group) for all months of year 02 and the first nine months of year 03 of funding. Thus, approximately 60 subjects will be assessed in year 02 and 50 subjects in year 03 of funding, to complete recruitment of the entire study sample.
- B. Database: The database will comprise of these categories of data: clinical, sociodemographic, psychosocial, and physiological. With the exception of hormonal data, all data will be entered continuously into a relational database. Reliability checks to assure accuracy in transcription and data entry will be performed every 3 months.
- C. Hormonal assays: Hormone bioassays on plasma samples will be run in four batches
- D. Data analyses and final reports: Preliminary data analyses will be conducted at approximately the half-way point of the study (months 17-19 of funding), and final data analyses will be completed by month 33 of funding

Since moving to the University of California, Irvine, the PI has now completed all the steps required to resume this research study. These steps include:

- 1. Setting up a behavioral medicine research laboratory
- 2. Obtaining IRB approval for the project from the University of California, Irvine

- 3. Obtaining approval from the University's General Clinical Research Center (GCRC) to conduct the study at the GCRC.
- 4. Obtaining the necessary documentation for the UCI Certificate of Environmental Compliance (Appendix 4), IRB approval (Appendix 5), and Safety Program Plan (Appendix 7).
- 5. Obtaining approval from the University's Oncology Practice to screen and recruit research subjects for the study.
- 6. Setting up a collaboration with an oncologist (Dr. Rita Mehta) and biochemist (Dr. Aleksandra Chicz-DeMet) for conducting the clinical and physiological components of the study.
- 7. Recruiting the necessary staff (graduate research assistant, laboratory assistant) to conduct the study.
- 8. Applying for the grant to be transferred, so that data collection can begin as soon as possible

KEY RESEARCH ACCOMPLISHMENTS:

Steps have been taken to resume research study as indicated above. Data collection at the new site will begin as soon as the transfer of grant is approved.

REPORTABLE OUTCOMES:

There are no reportable outcomes at this stage of the project.

CONCLUSIONS:

As soon as the request to transfer has been processed and approved, data collection will begin at the new institution.